

# The Maryland State Highway Administration



## Winter Hired Equipment Presentation

revised 08/19/2024

# Presentation Agenda

- Invoicing/Contract Item Number(s)
- Right to Audit Clause
- Conflict of Interest Clause
- Insurance/Registration
- Contractor/Equipment Requirements
- V-Box Spreader Systems
- Green Emergency Lighting
- Salt Usage/Environmental Impacts
- Plowing Best Practices
- Social Media
- FMCSA Regulations
- COVID/Virus Protocols
- Equipment/Facility/Structure Damage

# Invoicing Requirements

- Winter invoices are required to be submitted by email this winter season
- A valid email address shall be listed on the Contractor Equipment Statement in the Contract
- Electronic signatures will be used for this process
- All supporting documentation is required to be submitted with each winter invoice

# “e”Invoice Process

- Each Maintenance Facility has a designated email address to receive electronic invoices
- A specific email address will be provided to the Contractor for sending/receiving winter invoices
- Example Email address: [prefix@mdot.maryland.gov](mailto:prefix@mdot.maryland.gov)
- Ask your facility Office Manager/Procurement Officer for information specific to your location

# Item Number(s)/Invoicing

- Item number(s) have been established for equipment type/configurations in the Contract
- These will be required on the Contractor Equipment Statement and all invoices
- If item number(s) and equipment type/configurations are not included on the Contract/invoices this will delay payment

# Item Number(s)/Invoicing Cont.

- If a piece of equipment is going to provide multiple services to SHA, then each corresponding item number should be listed on the Contractor Equipment Statement
- Contractor equipment that provides multiple services to SHA shall only be entitled to one pre-season retainer (if applicable), one minimum payment guarantee (if applicable), and one post-season retainer (if applicable), whichever is highest for those services provided

# Item Number Example(s)

## Item No. - Single Axle Dump Trucks

H

Items required

- (01) Single axle dump with Contractor supplied snowplow and electronic salt spreader
- (02) Single axle dump with Contractor supplied snowplow and salt spreader
- (03) Single axle dump with Contractor supplied salt spreader and SHA supplied plow
- (04) Single axle dump with Contractor supplied snowplow and SHA supplied salt spreader
- (05) Single axle dump with Contractor supplied snowplow or salt spreader
- (06) Single axle dump carrying SHA supplied snowplow and salt spreader
- (07) Single axle dump carrying SHA supplied snowplow or salt spreader
- (08) Single axle dump for hauling salt, abrasives, snow, or winter debris

# Item Number Example(s) Cont.

Here are a few examples:

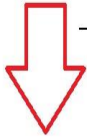
- Liquid Applicator Truck (3,000 gallon and above capacity) is Item 30 in the Contract
  - If used for transporting salt brine or other liquid de-icers it would be Item 35
- Tri-Axle Dump Truck with SHA Supplied Plow or Salt Spreader is Item 23 in the Contract
  - If used for hauling salt, abrasives, snow, or winter debris it would be Item 24



# Contractor Equipment Statement

Item  
Number(s)

## CONTRACTOR EQUIPMENT STATEMENT



COMPANY NAME

COMPANY PHONE

COMPANY EMAIL (required)

| ITEM NO. / NO's | EQUIP. TYPE         | CONT. EQUIP. NO. | TAG NO. | VEHICLE IDENTIFICATION NO. (VIN) | SIZE/ CAPACITY *(SA/DA/TRI) (CY BUCKET) (GALLONS) | PLOW/ FRAME                               | MANUAL SPREADER CONTROL SYSTEM | CB RADIO                        | ELECTRONIC SPREADER CONTROL SYSTEM |
|-----------------|---------------------|------------------|---------|----------------------------------|---|---|--------------------------------|---------------------------------|------------------------------------|
|                 | <i>SAMPLE BELOW</i> |                  |         |                                  |   |   | <b>Required</b>                |                                 |                                    |
|                 |                     |                  |         |                                  |   | <i>Indicate SHA or Owned or N/A below</i> |                                | <i>Indicate Yes or No below</i> |                                    |
| (23)            | TRUCK               | K 13             | 123456  | 1JC233K001EC                     | TRI   | SHA                                       | N/A                            | Yes                             | No                                 |
|                 |                     |                  |         |                                  |   |   |                                |                                 |                                    |
|                 |                     |                  |         |                                  |   |   |                                |                                 |                                    |
|                 |                     |                  |         |                                  |   |   |                                |                                 |                                    |
|                 |                     |                  |         |                                  |   |   |                                |                                 |                                    |
|                 |                     |                  |         |                                  |   |   |                                |                                 |                                    |
|                 |                     |                  |         |                                  |   |   |                                |                                 |                                    |
|                 |                     |                  |         |                                  |   |   |                                |                                 |                                    |
|                 |                     |                  |         |                                  |   |   |                                |                                 |                                    |
|                 |                     |                  |         |                                  |   |   |                                |                                 |                                    |



Required

# Invoice Example

Invoice Number: \_\_\_\_\_ BPO #: \_\_\_\_\_ Date: \_\_\_\_\_

Federal I.D. # or Social Security #: \_\_\_\_\_ Company Name: \_\_\_\_\_

Company Address: \_\_\_\_\_ Company Email Address: \_\_\_\_\_

Item number(s)

Bill To: Maryland State Highway Administration

Address: \_\_\_\_\_

Event # \_\_\_\_\_

Required

| Item No.                       | Type of Equipment/Configuration       | Tag No. | Date(s) of Service | Check In | Check Out | Rate   | Travel Time (if applicable) | Clean Up Time (if applicable) | Down Time | Total Hours | Redeployed (EA) | Amount  |
|--------------------------------|---------------------------------------|---------|--------------------|----------|-----------|--------|-----------------------------|-------------------------------|-----------|-------------|-----------------|---------|
|                                | <i>SAMPLE BELOW</i>                   |         |                    |          |           |        |                             |                               |           |             |                 |         |
| (23)                           | Tri Axle Dump w/ SHA Plow or Spreader | 123456  | 12/29/24           | 0100     | 1200      | 155.00 | N/A                         | N/A                           | N/A       | 11.0        | N/A             | 1705.00 |
|                                |                                       |         |                    |          |           |        |                             |                               |           |             |                 |         |
|                                |                                       |         |                    |          |           |        |                             |                               |           |             |                 |         |
|                                |                                       |         |                    |          |           |        |                             |                               |           |             |                 |         |
|                                |                                       |         |                    |          |           |        |                             |                               |           |             |                 |         |
|                                |                                       |         |                    |          |           |        |                             |                               |           |             |                 |         |
|                                |                                       |         |                    |          |           |        |                             |                               |           |             |                 |         |
|                                |                                       |         |                    |          |           |        |                             |                               |           |             |                 |         |
| <b>Total Amount of Invoice</b> |                                       |         |                    |          |           |        |                             |                               |           |             | 1705.00         |         |

# Right to Audit Clause

- This requires the Contractor to maintain all records pertaining to the Contract for three (3) years, after the Contract end date, and make them accessible at SHA's request
- This could be documents that are paper, electronic, .pdf, carbon copy, etc.
- Any monies found owed to the Administration will be deducted from future payments or captured by other means if necessary
- This section requires a signature

# Conflict of Interest Clause

- This requires the Contractor to disclose any relationships within company framework that might cause a conflict of interest
- The Contractor is required to disclose any potential conflict of interest to SHA once they become aware
- The Contract may be terminated, but SHA will need to conduct a thorough investigation
- A section to disclose any conflicts prior to submitting the contract for approval has been added

# Insurance/Registrations

- All insurance policies/registration(s) must be maintained, at a minimum, from November 1, 2024 through April 30, 2025
- The failure to maintain all insurance/registration requirements throughout the term of the Contract will be cause for termination of the Contract and will void the any post-season retainer(s) and any remaining minimum payment guarantee(s) due to the Contractor
- The Contractor shall make SHA aware of any changes to the status of certificate(s) of insurance or registration(s) within five (5) calendar days

# Contract Discrepancies

- This is a non-exclusive Contract. It does not include all work expected to be performed in the designated areas. Therefore, at times, other Contractors may be performing similar work that is not associated with this Contract.
- Should there be any discrepancies between the Contract, actual field conditions or any other circumstances, the RME or designee shall make the final determination.

# Winter Operations

- Safety is SHA's number one priority during all snowstorm activities
- Snow removal equally shares first priority regarding highway maintenance operations
- SHA and Contract forces are jointly responsible for minimizing impacts to the environment and minimizing winter operations costs

# Winter Operations

- SHA's policy states that winter operations will continue until all state roads are free from snow and ice
- If needed, relief operators shall be employed by the Contractor and shift changes shall occur on the assigned snow route or at a pre-determined location
- Contractor operators/equipment are not exempt from any FMCSA laws or regulations, including hours of service, while performing winter operations for SHA





# Contractor Equipment Requirements

- All equipment used for snow removal/anti-icing operations **SHALL** have met **ALL** Contract requirements
- All equipment used for snow removal/anti-icing operations **SHALL** be approved by SHA and listed on or added to the Contract Equipment Statement prior to its use
- If any equipment used by the vendor is found to be non-compliant and in breach of the Contract, it may be terminated

# Snow Removal Requirements

- Operators are required to have all equipment calibrated and operational prior to check in
- All contract personnel and equipment must be logged in and out of service
- All operators must provide their cell phone number
- ***NO REPAIR DELAYS!*** All equipment should be ready for work upon arrival
- SHA will not pay for down time on equipment that extends beyond one hour. (this will include any piece of equipment that is involved in an accident, at fault or not)

# Snow Removal Requirements

- All CB radios must be in good working condition
- Check with your Snow Supervisor for the appropriate channel
- SHA equipment being utilized by contract forces shall **NOT** be used for any other work



wiseGEEK

# Automatic Vehicle Location (AVL)

- AVL technology will be used to track the current and past locations of SHA trucks and select contract equipment
- AVL technology will increase the efficiency, effectiveness, and safety of SHA and contracted equipment operators
- The Contractor's truck shall provide a 12-volt DC Power Port or other similar power source for the plug-in AVL unit

# Automatic Vehicle Location (AVL)

- The power source shall be in the truck's cab to protect the AVL unit from damage
- The Contractor's equipment may be fitted with an AVL unit at the pre-season inspection
- The Contractor's personnel may be asked to sign a form accepting the AVL unit for the winter season

# Automatic Vehicle Location (AVL)

- The AVL unit must be kept operational throughout the storm and returned, in working order, at the close of the winter season
- Failure to keep the AVL unit powered during winter operations will result in a 50% deduction from the post-season retainer
- A second occurrence will result in no post-season retainer and the contract may be terminated
- The Contractor shall have \$500 deducted from post-season retainer for failing to return the unit in working order at the end of the winter season

# V-Box Type Spreader System

- At the request or discretion of the RME or designee, Contractors may opt to use an equivalently sized V-Box type spreader/delivery system
- The RME or designee shall make the sole determination as to whether the equivalently sized V-Box type spreader/delivery system meets the needs of the Administration
- There shall be no additional compensation for the use, maintenance, repair, or any damages to an equivalently sized V-Box type spreader/delivery system on a hired piece of winter equipment



# Green Emergency Lighting

- Per House Bill 1150, green emergency lights may be used on emergency vehicles when participating in winter operations
- However, if incorporated, the number of green lights must be equal to or less than the number amber lights
- All lights, regardless of color, must be provide 360-degree visibility from within 50 feet of the vehicle



# Call-Out Phases

- Each storm is evaluated based on the forecasted accumulation, duration, and severity
- Report times can be accelerated based on intensity of the storm, timing of the event, and other factors beyond SHA's control
- SHA will consider all factors when determining the proper response for each event

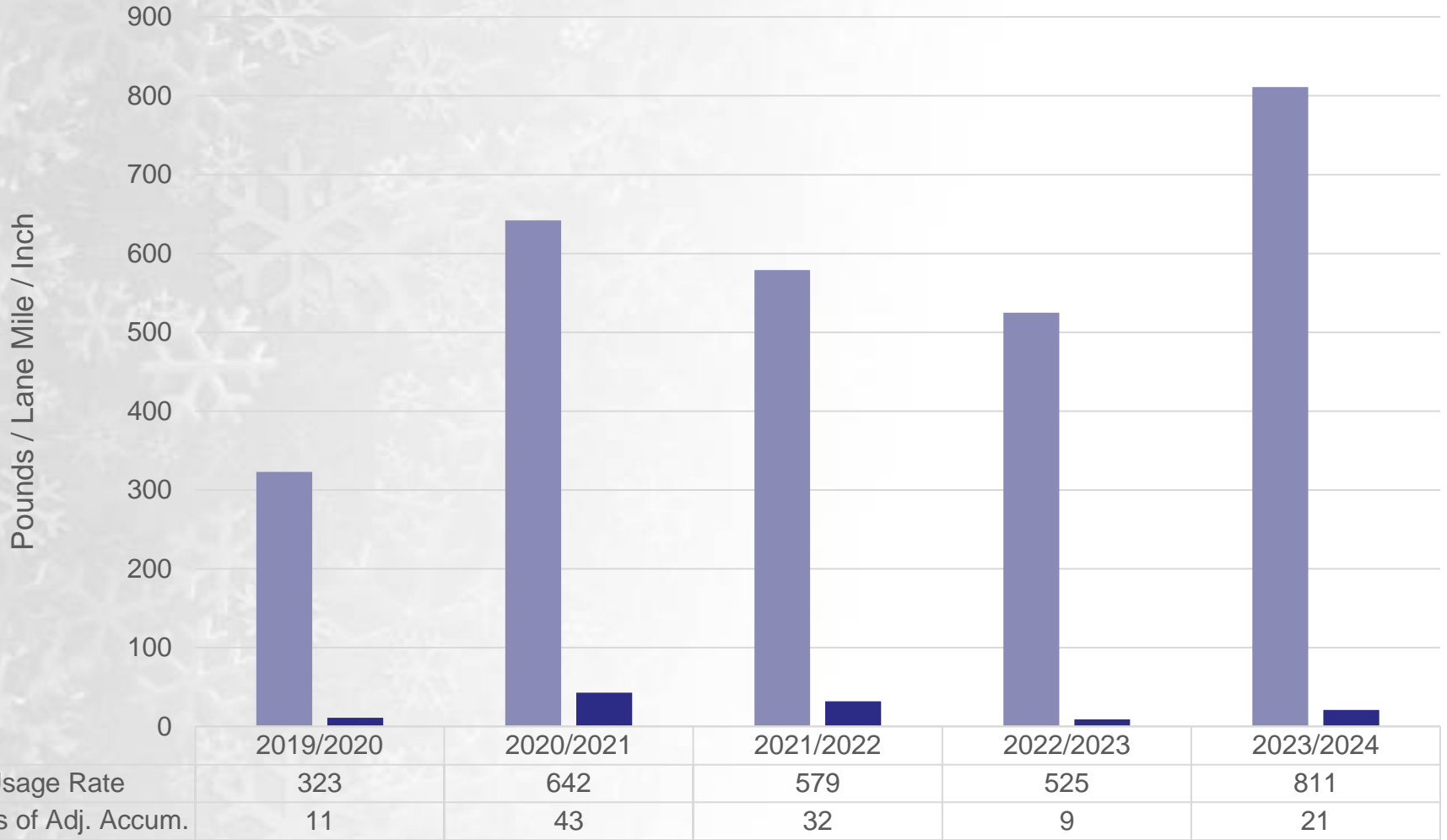
# Call-Out Phases

- **Phase 1** - (0-1 inch forecast or  $<0.1$  inches of freezing precipitation) Includes only SHA Trucks
- **Phase 2** - (1-2 inch forecast or 0.1 to 0.2 inches of freezing precipitation) Includes Phase 1 trucks and hired spreader trucks to supplement SHA work forces on designated routes where there are no assigned SHA trucks

# Call-Out Phases

- **Phase 3** - (2-4 inch forecast or  $>0.2$  inches of freezing precipitation) Includes Phase 2 trucks and hired spreader trucks to supplement the SHA work forces during heavier snowfalls
- **Phase 4** - ( $>4$ -inch forecast or major freezing precipitation) Includes all Phase 3 trucks and hired push trucks to supplement SHA work forces on designated routes as roadway conditions warrant

# Statewide Salt Usage Trends



■ Salt Usage Rate    ■ Inches of Adj. Accum.


# Salt Impacts on the Environment



***So, what's the big deal?? Salt is a naturally occurring substance!***

While salt is a naturally occurring substance, high concentrations of salt negatively affect or destroy land and aquatic habitat/species

# Salt Impacts on the Environment

- 
- Once granular salt mixes with snow or ice it becomes a brine solution. This solution then runs off the roadway and is stored in soil or water and can reach levels that are considered unhealthy to the environment
  - Salt can contaminate drinking water supplies in wells and reservoirs, slows the establishment of vegetation or crops, and destroys the aquatic habitat of marine life

# Salt Impacts on the Environment



Dumping salt in this area killed the vegetation and the area was at risk for erosion. This area had to be restored by removing contaminated soil, backfilling and seeding and mulching.

# TMDL

- **Total Maximum Daily Load**
- Definition: a regulatory term in the U.S. Clean Water Act, describing a value of the maximum amount of a pollutant that a body of water can ingest daily while still meeting water quality standards
- TMDL's already exist for phosphorus, nitrogen, and sediment for many watersheds and waterways in Maryland



# TMDL

- TMDL's for Chlorides (salt) are not currently being applied to Maryland watersheds, but 28 watersheds have been designated as impaired by chlorides
- Once a TMDL is placed on a watershed it carries heavy fines if not adhered to
- SHA and its vendors should continue using internal BMPs to stave off the possibility of TMDL implementation

# TMDL

Ask yourself these three simple questions when it comes to TMDL's and salt usage...

Do I enjoy spending time outdoors and enjoying some of Maryland's finest seafood?

Do I value the drinking water, health and well being of my spouse, child, or elderly parent?

Is there something I may be able to do different to make a difference?



**YOU play a more prominent role in protecting our environment during winter operations than you may have originally thought!**

# THE BOTTOM LINE...

Over salting is slowly ruining our environment and the very water we need to survive...

We need to recognize it and collectively do something about it...

# Practical Salt/Brine Usage

- A well-trained operator knows when to apply salt/brine, and when not to
- Use the correct amount of salt/brine necessary to get the job done
- Using more salt/brine than necessary works against you and damages the environment



# Practical Salt/Brine Usage

- Never overload trucks to avoid spillage of salt at SHA facilities and on the roadway
- Always travel at a safe speed for optimum performance, safety, and to help keep salt on the road and out of the roadside ditches



# Practical Salt/Brine Usage

- Always keep your load covered to avoid unnecessary loss of material when traveling
- Don't salt/brine roads that have already been salted
- Only apply salt/brine to your designated snow route when directed by SHA personnel
- Always use the appropriate salt/brine application rates, or as directed by SHA management

# Practical Salt/Brine Usage

- Don't apply salt/brine to an undesignated snow route unless directed to by SHA personnel
- All unused salt/brine must be returned to the dome or barn that it was loaded from
- Never spread salt/brine just to get rid of it



# Best Practices for Plowing Safety

- Be aware of the weight of heavy snow and the damage it can cause when thrown by a plow



- Never plow snow over bridge parapets or jersey barrier walls - that could endanger traffic and/or pedestrians below

# Best Practices for Plowing Safety

Watch out for manholes, railroad tracks, expansion joints, bridge abutments, utility cuts, mailboxes, etc.



# Best Practices for Plowing Safety

Watch for curbs and steel plates...



# Best Practices for Plowing Safety

Always be aware of your truck's bed height.  
Watch for overhead signs, traffic signals, utility wires, tree limbs, and bridges



# Intersections

- Empty your plow before crossing intersections
- Reduce the size of the windrow
- Avoid building snowbanks that interfere with sight distance
- Keep traffic signs unobstructed from view

# Ramps and Curves

- Plow ramps and curves from the high side to the low side
- Spread salt/brine on the high side of ramps and curves
- Keep your speed down on all ramps and curves

# Bridges and Overpasses

- Bridge surface may be higher than the road surface due to the bridge freezing and expanding
- Care must be taken not to throw snow over the bridge to the road below
- Keep the sidewalks on bridges open for pedestrians

# Shoulders, Medians & Jersey Barriers

- Plow away from medians with minimum width shoulder and barrier wall
- Avoid plowing snow against a jersey barrier as this creates a ramp for vehicles to possibly become airborne



# Mountains and Hills

- Traction is limited on hills
- Stopping can be difficult on hills
- Watch for melted snow refreezing in the road valley

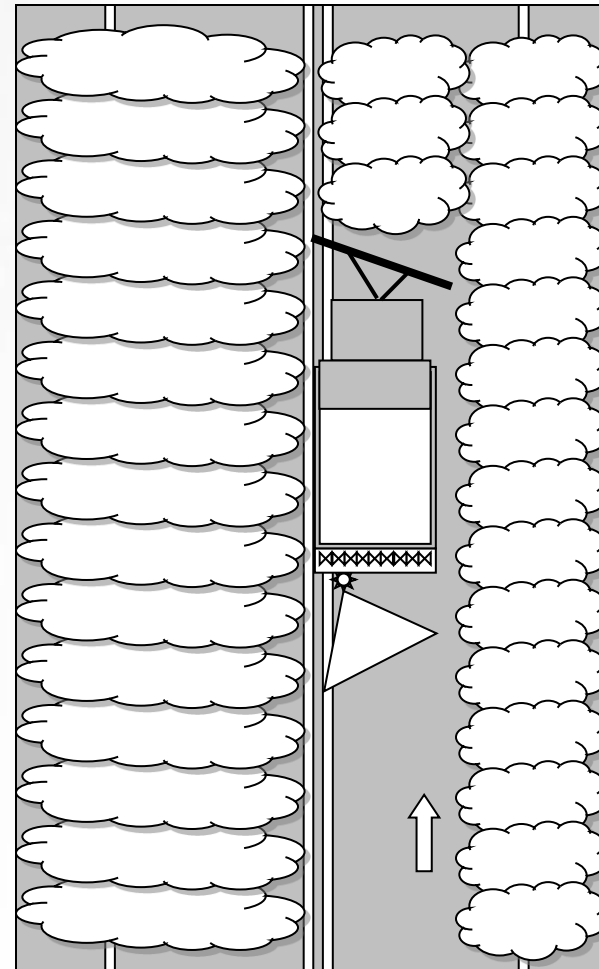
# Railroad Crossings

- Avoid piling snow against signals, switch boxes, signs, etc.
- Raise plows slightly when crossing railroad tracks
- Watch for flashing lights and mast arms blocking the roadways

# Two Way Road Single Truck

## First Pass

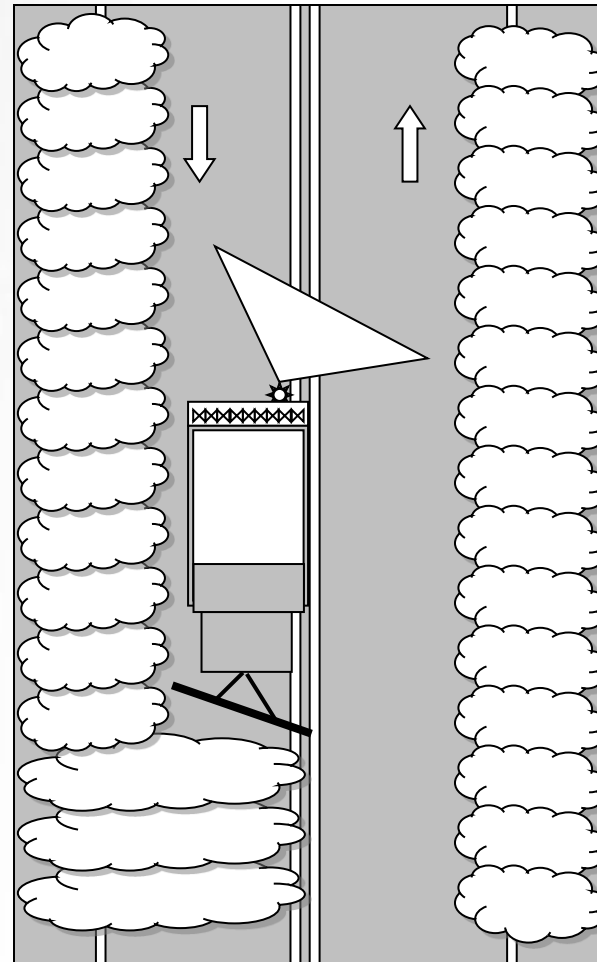
Plow lane in one direction and drop salt behind truck



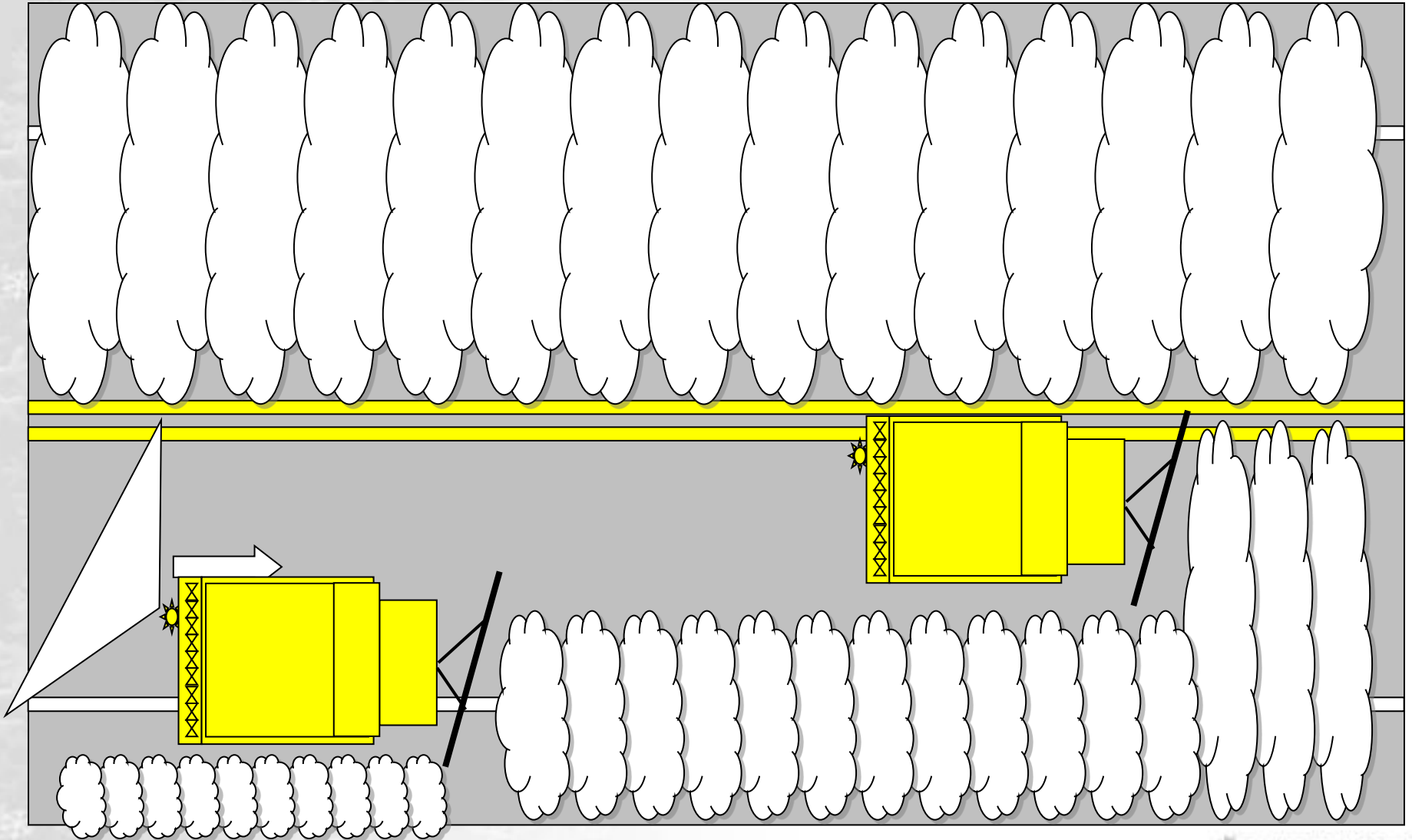
# Two Way Road Single Truck

## Second Pass

After plowing in one direction, turn at end of route, plow lane in opposite direction and salt both lanes.

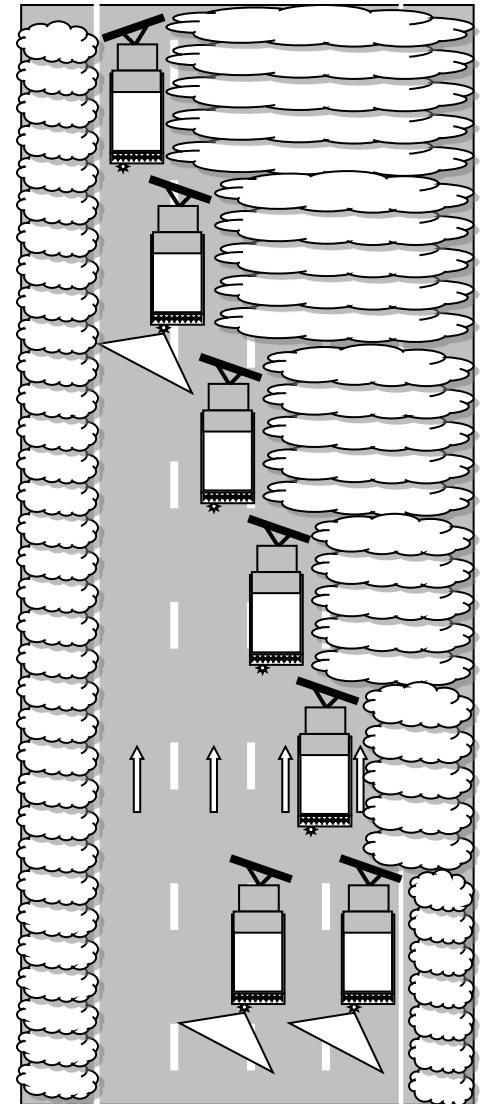


# Two Way Road Two Trucks



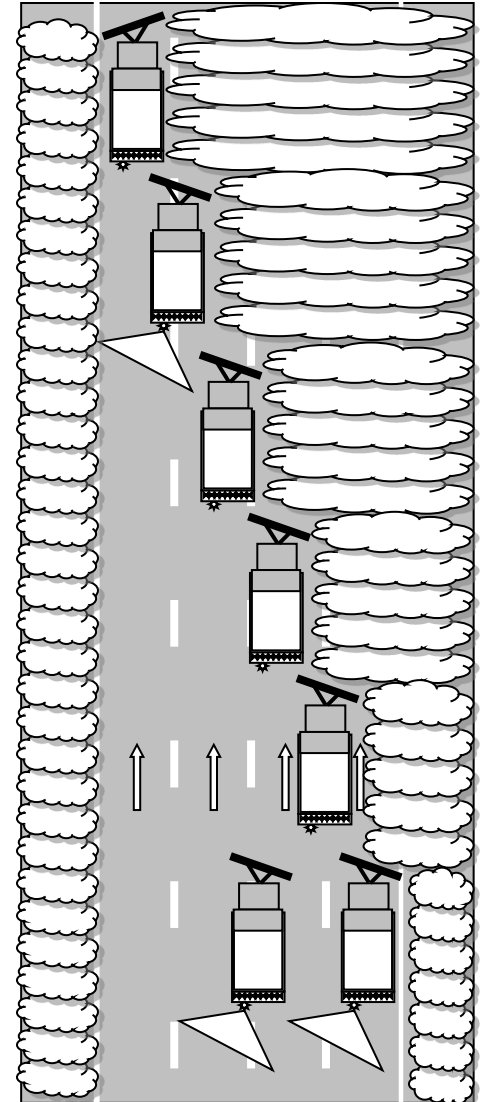
# Multi-Vehicle Plowing

- The deeper the snow, the more overlap needed to avoid leaving a windrow
- First truck clears 8 feet of the left traffic lane, leaving 4 feet for second truck
- Second truck overlaps 1 foot clearing 4 feet of first lane and 3 feet of second lane, leaving 9 feet for third truck



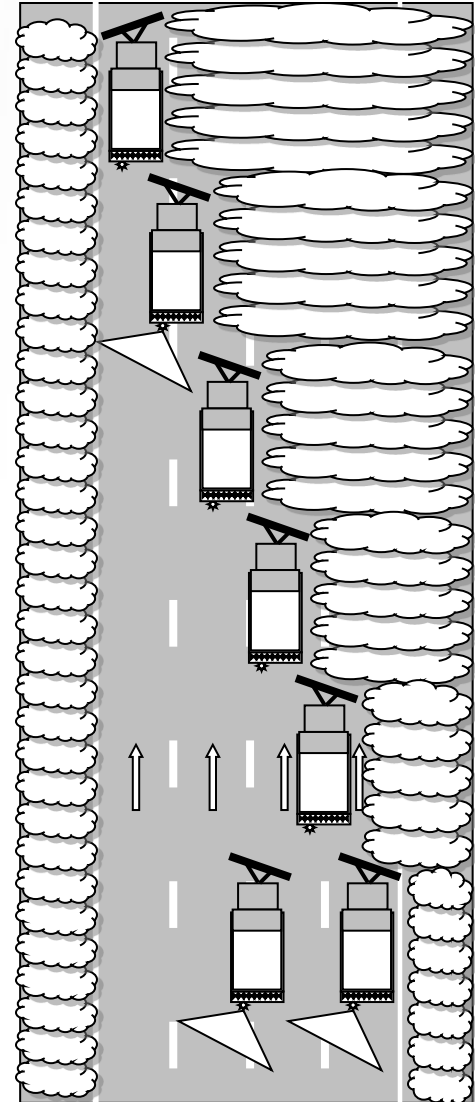
# Multi-Vehicle Plowing

- Third truck overlaps 1 foot clearing 7 feet of second lane, leaving 2 feet for fourth truck
- Fourth truck overlaps 1 foot clearing 2 feet of second lane and 5 feet of shoulder
- One more truck would be required if a third lane was present



# Multi-Vehicle Plowing

- Four or more lanes would require more plow trucks
- The larger trucks should be at the end of the train
- The last truck plows ramps





# Plowing Points to Remember

- Always give bridges and ramps special attention
- Salt/brine the high sides of curves
- Do not over-use salt/brine. Use just enough to get the job done
- Designate specific trucks in a plow train for salting to ensure no overlap of resources

# Plowing Points to Remember

- Salt loses most of its effectiveness at temperatures below 20°F
- Adding more salt to an already salted roadway can cause the brine solution to freeze
- Salt stops working altogether at - 6°F

# FMCSA Regulations

- All applicable FMCSA regulations apply to equipment and operators
  - This includes, but not limited, Hours of Service
- Contractors are not covered under SHA's emergency exemption during winter events

# Operator Guidelines

- Always contact your SHA supervisor prior to leaving your designated snow route or if you get separated from your assigned SHA truck
- Show up or commute time, from the designated SHA facility to assigned route, must not be excessive

# Operator Guidelines

- Always communicate the need for fuel or meals with your snow supervisor prior to leaving your assigned route
- Coordinate all refueling to minimize disruptions to the snow removal operations



# Operator Guidelines

- Check the cutting edge of your plow before each event to avoid damage to the plow structure
- When working for SHA, DON'T plow and salt parking lots, driveways or roads that do not belong to SHA

# Operator Guidelines

- Relief operators **shall** be changed out on their snow routes or at predetermined location approved by SHA
- All trucks loaded with salt while on standby or just plowing should be covered to avoid freezing

# Facility Entrance Protocols

- Considering additional COVID/Virus concerns, SHA will continue with current security protocols for building entrance
- Building entrance protocols may change throughout the snow season, please read all signs before entering a building
- Operators must adhere to all current SHA building security procedures when entering and exiting facilities during winter operations



# Social Media Usage

- Operators shall not post anything SHA related on social media while performing winter operations for the Administration
- This could lead to negative public perception of SHA winter operations
- It may also lead to legal issues should an accident or an act of environmental non-compliance occur

# Accidents and Damage

- Always maintain a heightened state of awareness when working around salt structures or out on the roadways
- Report all accidents involving SHA equipment or facilities promptly to the snow supervisor and obtain a police report
- SHA will not be held responsible for damage incurred to the Contractor's vehicle while carrying SHA's snow removal equipment

# Accidents and Damage

- Upon returning to the shop, the driver will stay with their truck and assist with the repairs of SHA equipment
- If a repair part is required at the shop, all repair parts must be acquired by a shop mechanic
- All damaged or non-operating equipment must be reported to the snow supervisor, repaired ASAP and/or prior to the next storm

# Overhead



# Structure Hits



# Overhead Structure Hits

- Keep truck bodies lowered when traveling
- Use extreme caution when raising the body to fill the auger box
- Remain aware of your surroundings:
  - signals
  - utility wires
  - overhead signs
  - bridges

# Overhead Structure Hits

- The “Notice of Unsatisfactory Performance” will now allow post-season retainers to be deducted and your contract terminated for multiple infractions
- Contractors will be responsible for any cost of damages due to any negligence
- **SO PLEASE BE VIGILANT!!**

**Thank You For Your Attendance!**

**There is no better time than the present to express our appreciation for your support!**

**The State Highway Administration thanks you for making a difference towards our winter snow removal activities!**